

§43.105

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(b) Single sampling plans having a sample size of 66 or greater and an acceptance number of 1 are not included in the Master Table. These plans are listed in the tables which supplement the Master Table and accompany the OC curves as indexes to the comparable double sampling plans. The use of these single sampling plans do not facilitate the practice of using two or more AQL's simultaneously with the same sample size.

§ 43.105 Operating characteristics (OC) curves.

The OC curves shows the ability of the various sampling plans, presented for each AQL, to distinguish between lots of different quality.

§ 43.106 Choosing AQL's and sampling plans.

(a) The selection of AQL's and sampling plans for given lot sizes depends on too many factors to permit the issuance of a "pre-selected" standard set of plans for specified lot sizes. Each user of the standards of this subpart should select AQL's and sampling plans that are tailored to best meet his needs.

(b) Some of the factors that must be considered prior to selecting the AQL's are:

(1) Class of defects such as major and minor: Major defects would generally require lower AQL's than those for minor defects;

(2) Process capabilities under good commercial practice with respect to the defects in question: For example, if under normal production processes, the defect level cannot be kept below 2.0 percent defective, the selection of an AQL of 0.15 percent defective, although desirable for the defects in question, may not be practical;

(3) Consumer preferences: These may require higher AQL's or permit lower

AQL's than process capabilities would indicate; and

(4) Time and cost required to sample and inspect a lot under various AQL's: The smaller the AQL the more time and cost of inspection.

(c) Some of the factors that may be considered prior to selecting the sampling plans for given lot sizes are:

(1) The applicable AQL(s): The AQL dictates, among other things, the smallest sample size that can be used and the size of the "jumps" from one sample size to the next larger one;

(2) The relative ability of the plans to discriminate between "good" and "bad" lots: Although several plans in these standards have the same AQL, they differ in their ability to reject lots worse than the AQL's. The OC curve in the standards of this subpart provide the basis for determining the discriminating ability of each plan;

(3) The amount, time, and cost of sampling required;

(4) The size and value of the lots relative to the producer and consumer protection a sampling plan affords: One may be willing to take larger risks of passing "bad" lots that are small or of lesser value than they would for larger more valuable lots;

(5) The knowledge about the lot(s) to be submitted for inspection: Lots consisting of product produced under essentially the same conditions may require smaller sample sizes than those consisting of product produced by different shifts and different raw stock for example; and

(6) The record of the quality level of previously submitted lots: The sample size can be smaller for lots submitted from a supplier with a consistent record of quality levels significantly better than the specified AQL(s) than sample sizes for the supplier whose records show considerable variability in quality, "borderline" supplies or product worse than the AQL.

Sample size code letter	Sample size	Acceptable quality levels															
		0.065 Ac Re	0.10 Ac Re	0.15 Ac Re	0.25 Ac Re	0.40 Ac Re	0.65 Ac Re	1.0 Ac Re	1.5 Ac Re	2.5 Ac Re	4.0 Ac Re	5.0 Ac Re	6.5 Ac Re	8.5 Ac Re	10.0 Ac Re	12.5 Ac Re	15.0 Ac Re
AA	n _t =1 .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0 1	0 1
A	n _t =2 .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0 1	0 1
B	n _t =3 .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0 1	.....	.....	0 3	1 2
	n _t =8 .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2 3	2 3
C	n _t =4 .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0 1	.....	.....	.....	1 2	1 2
D	n _t =5 .....	.....	.....	.....	.....	.....	.....	.....	.....	0 1	.....	.....	.....	.....	.....	2 3	2 3
E	n _t =6 .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1 2	.....	.....	.....	.....	2 3	2 3
EE	n _t =7 .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2 3	2 3
F	n _t =9 .....	.....	.....	.....	.....	.....	.....	0 1	.....	1 2	.....	.....	2 3	.....	.....	3 4	3 4
G	n _t =11 .....	.....	.....	.....	.....	.....	.....	.....	1 2	.....	2 3	.....	2 3	.....	.....	3 4	3 4
H	n _t =13 .....	.....	.....	.....	.....	0 1	0 2	0 2	2 3	1 4	3 4	3 5	3 4	4 5	4 5	4 5	4 5
J	n _t =21 .....	.....	.....	0 1	0 2	0 2	2 3	1 4	3 4	3 5	4 5	5 6	5 6	6 7	6 7	6 7	6 7
	n _t =31 .....	.....	.....	.....	.....	1 2	2 3	3 4	3 5	4 6	5 6	5 7	6 8	6 9	7 8	7 8	7 8
K	n _t =29 .....	.....	.....	0 1	0 2	1 2	2 3	1 4	3 4	4 5	3 7	5 6	6 7	7 8	7 9	7 8	7 8
	n _t =65 .....	.....	.....	.....	1 2	2 3	3 4	4 5	5 6	6 7	7 8	8 9	9 10	10 11	11 12	11 12	11 12
L	n _t =48 .....	.....	0 1	0 2	1 2	2 3	3 4	4 5	5 6	6 7	7 8	8 9	9 10	10 11	11 12	11 12	11 12
	n _t =72 .....	.....	.....	1 2	2 3	3 4	4 5	5 6	6 7	7 8	8 9	9 10	10 11	11 12	11 12	11 12	11 12
M	n _t =84 .....	.....	0 1	0 2	0 3	2 3	3 4	4 5	6 7	7 8	9 10	11 12	13 14	15 16	18 19	18 19	18 19
	n _t =120 .....	.....	.....	1 2	2 3	3 4	4 5	5 6	6 7	7 8	8 9	10 11	11 12	15 16	18 19	18 19	18 19
	n _t =132 .....	.....	.....	.....	2 3	3 4	4 5	5 6	6 7	7 8	8 9	10 11	13 14	16 17	18 19	22 23	26 27
N	n _t =126	0 1	0 2	0 3	2 3	3 4	4 5	6 7	9 10	10 11	13 14	16 17	18 19	22 23	26 27	26 27	26 27
	n _t =180 .....	.....	1 2	2 3	3 4	4 5	5 6	6 7	9 10	10 11	13 14	16 17	18 19	22 23	26 27	26 27	26 27
P	n _t =210 .....	.....	2 3	3 4	4 5	6 7	9 10	13 14	15 16	19 20	24 25	27 28	33 34	39 40	39 40	39 40	39 40
	n _t =200	0 1	0 2	0 3	2 3	3 4	4 5	6 7	9 10	13 14	15 16	19 20	24 25	27 28	33 34	39 40	39 40
	n _t =284 .....	.....	1 2	2 3	3 4	4 5	6 7	9 10	13 14	15 16	19 20	24 25	27 28	33 34	39 40	39 40	39 40
Q	n _t =326 .....	.....	2 3	3 4	4 5	6 7	8 9	13 14	19 20	22 23	28 29	35 36	41 42	50 51	59 60	59 60	59 60
	n _t =315	0 1	0 2	0 3	2 3	3 4	4 5	6 7	8 9	13 14	19 20	22 23	28 29	35 36	41 42	50 51	59 60
	n _t =435	1 2	2 3	3 4	4 5	6 7	8 9	13 14	19 20	22 23	28 29	35 36	41 42	50 51	59 60	59 60	59 60
R	n _t =519	2 3	3 4	4 5	6 7	9 10	12 13	18 19	28 29	33 34	42 43	53 54	62 63	76 77	90 91	90 91	90 91
	n _t =500	0 2	0 3	2 3	3 4	4 5	6 7	9 10	12 13	18 19	28 29	33 34	42 43	53 54	62 63	76 77	90 91
	n _t =644	1 2	2 3	3 4	4 5	6 7	9 10	13 14	19 20	26 27	41 42	63 64	76 77	90 91	90 91	90 91	90 91
	n _t =836	2 3	3 4	4 5	6 7	9 10	13 14	19 20	28 29	39 40	62 63	96 97	96 97	96 97	96 97	96 97	96 97
S	n _t =800	0 3	2 3	3 4	4 5	6 7	9 10	13 14	18 19	27 28	42 43	50 510	64 65	82 83	95 96	117 118	140 141
	n _t =1304	2 3	3 4	4 5	6 7	9 10	13 14	19 20	28 29	39 40	62 63	96 97	96 97	96 97	96 97	96 97	96 97
T	n _t =1250	2 3	3 4	4 5	6 7	9 10	13 14	19 20	26 27	41 42	63 64	76 77	76 77	76 77	76 77	76 77	76 77
U	n _t =2000	3 4	4 5	6 7	9 10	13 14	19 20	28 29	39 40	62 63	96 97	96 97	96 97	96 97	96 97	96 97	96 97

¹ Double plans are indicated by 2 sample sizes, n_t (first) and n_t (total). Ac=Acceptance number Re=Rejection number.

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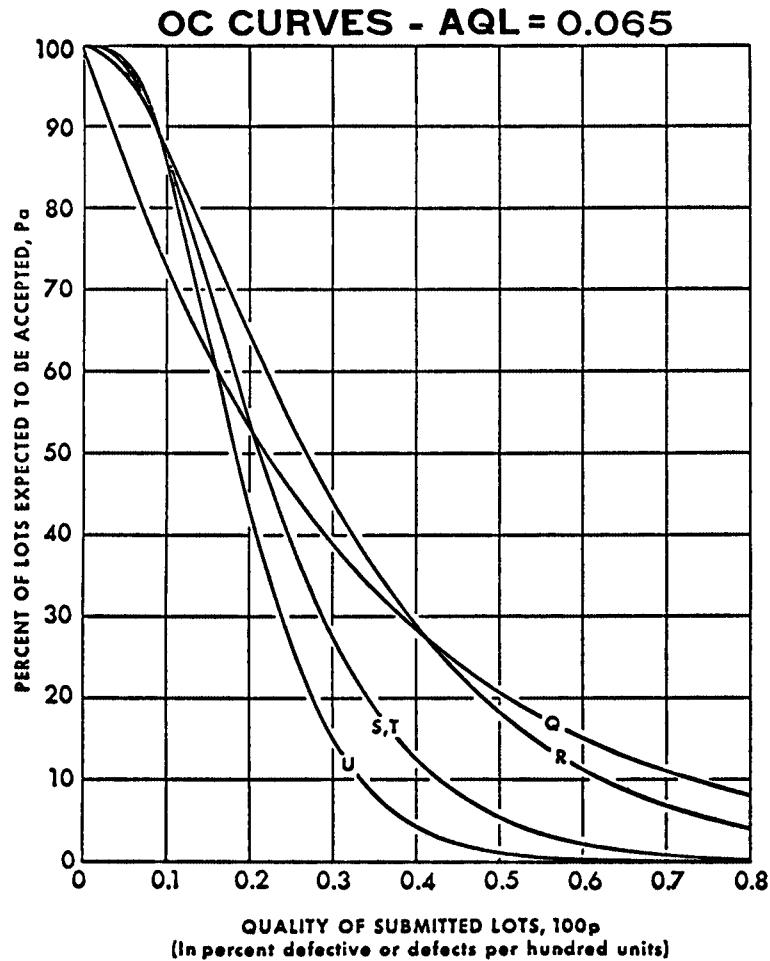
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SAMPLING PLANS AND OPERATING CHARACTERISTIC (OC) CURVES FOR AQL=0.065 PERCENT DEFECTIVE (OR AQL=0.065 DEFECTS PER HUNDRED UNITS)

[Sampling plans—AQL=0.065]

Comparable sampling plans	Identification letter of OC curve											
	Q			R			S, T			U		
	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re
Single	315	0	1	624	1	2	1250	2	3	2,000	3	
Double .....	.....	.....	.....	500	0	2	800	0	3	.....	.....	.....
	.....	.....	.....	644	1	2	1304	2	3			

n_c =Cumulative sample size. Ac=Acceptance number. Re=Rejection number.

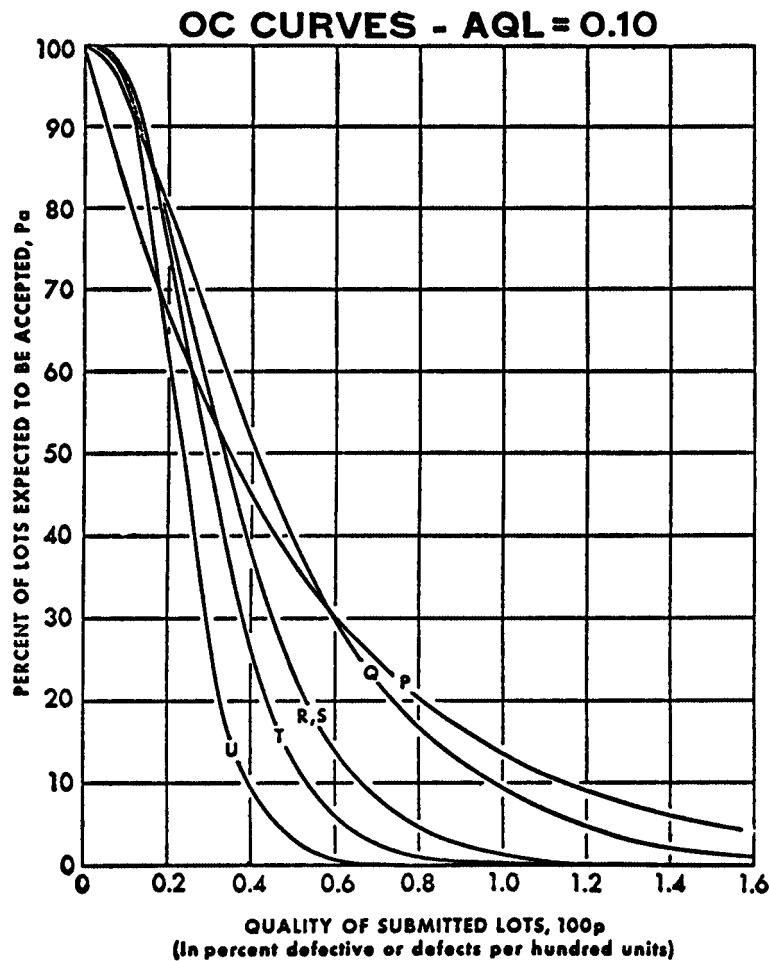


SAMPLING PLANS AND OPERATING CHARACTERISTIC (OC) CURVES FOR AQL=0.10 PERCENT
DEFECTIVE (OR AQL=0.10 DEFECTS PER HUNDRED UNITS)

[Sampling plans—AQL=0.10]

Comparable sampling plans	Identification letter of OC curve														
	P			Q			R, S			T			U		
	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re
Single	200	0	1	408	1	2	800	2	3	1,250	3	4	2,000	4	
Double .....	.....	....	....	315	0	2	500	0	3	.....	....	....	.....	....	....
	435	1	2	836	2	3

n_c =Cumulative sample size. Ac=Acceptance number. Re=Rejection number.



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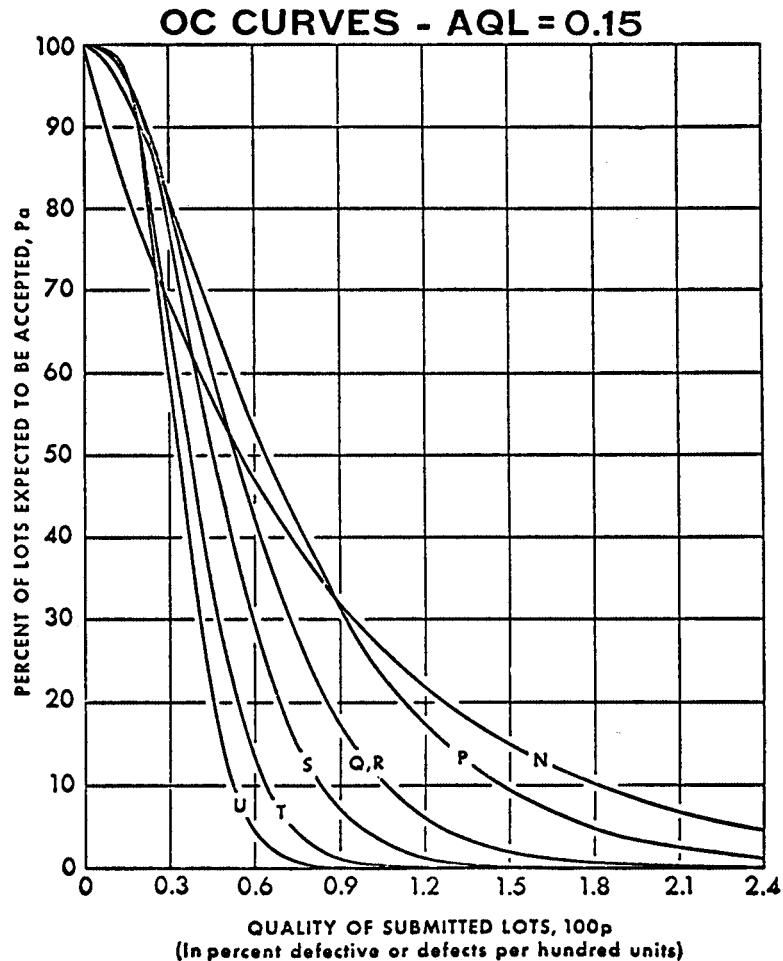
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SAMPLING PLANS AND OPERATING CHARACTERISTIC (OC) CURVES FOR AQL=0.15 PERCENT DEFECTIVE (OR AQL=0.15 DEFECTS PER HUNDRED UNITS)

[Sampling plans—AQL=0.15]

Comparable sampling plans	Identification letter of OC curve																	
	N			P			Q			R, S			T			U		
	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re
Single	126	0	1	264	1	2	500	2	3	800	3	4	1,250	4	5	2,000	6	7
Double .....	....	....	....	200	0	2	315	0	3	....	....	....	....	....	....	....	....	....
	284	1	2	519	2	3

n_c =Cumulative sample size. Ac=Acceptance number. Re=Rejection number.



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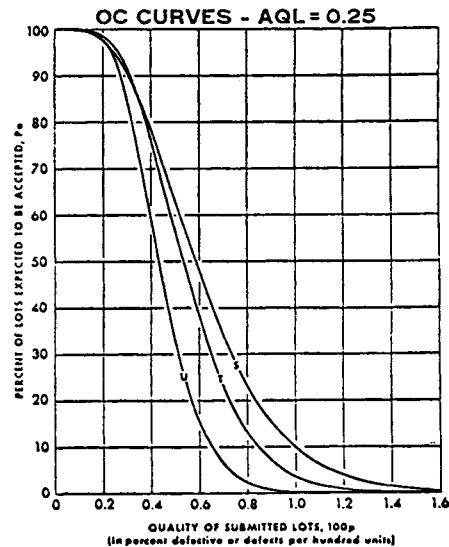
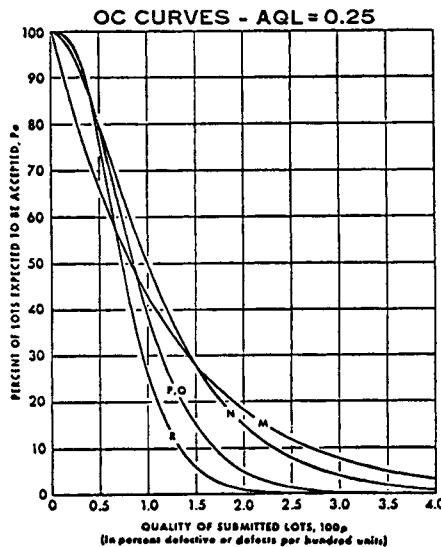
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SAMPLING PLANS AND OPERATING CHARACTERISTIC (OC) CURVES FOR AQL=0.25 DEFECTS PER HUNDRED UNITS

[Sampling plans—AQL=0.25]

Comparable sampling plans	Identification letter of OC curve																				
	M			N			P, Q			R			S			T			U		
	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re
Single	84	0	1	168	1	2	315	2	3	500	3	4	800	4	5	1250	6	7	2000	9	10
Double ....	....	....	....	126	0	2	200	0	3	....	....	....	....	....	....	....	....	....	....	....	....
	180	1	2	326	2	3

n_c =Cumulative sample size. Ac=Acceptance number. Re=Rejection number.



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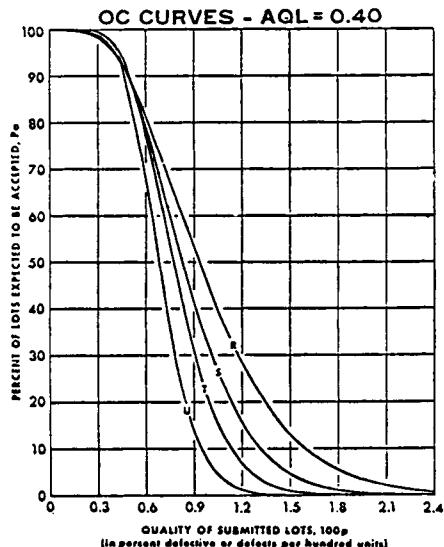
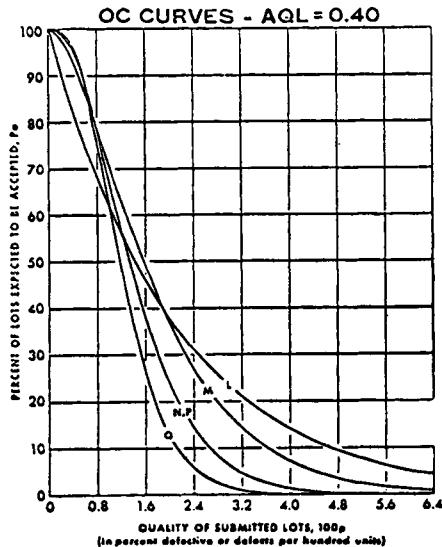
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SAMPLING PLANS AND OPERATING CHARACTERISTIC (OC) CURVES FOR AQL=0.40 PERCENT DEFECTIVE (OR AQL=0.40 DEFECTS PER HUNDRED UNITS)

[Sampling plans—AQL=0.40]

Comparable sampling plans	Identification letter of OC curve																								
	L			M			N, P			Q			R			S			T			U			
	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	
Single	48	0	1	108	1	2	200	2	3	315	3	4	500	4	5	800	6	7	1250	9	10	2000	13	10	
Double	84	0	2	126	0	3

n_c =Cumulative sample size. Ac=Acceptance number. Re=Rejection number.



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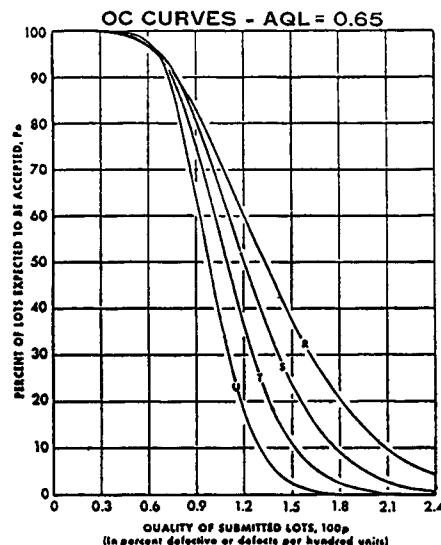
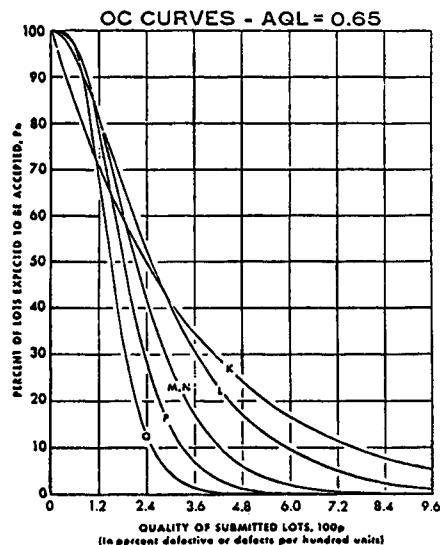
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SAMPLING PLANS AND OPERATING CHARACTERISTIC (OC) CURVES FOR AQL=0.65 PERCENT DEFECTIVE (OR AQL=0.65 DEFECTS PER HUNDRED UNITS)

[Sampling plans—AQL=0.65]

Comparable sampling plans	Identification letter of OC curve																		T			U					
	K			L			M, N			P			Q			R			S			T					
	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re			
Single	29	0	1	66	1	2	126	2	3	200	3	4	315	4	5	500	6	7	800	9	10	1250	13	14	2000	19	20
Double	48	0	2	84	0	3

n_c =Cumulative sample size. Ac=Acceptance number. Re=Rejection number.



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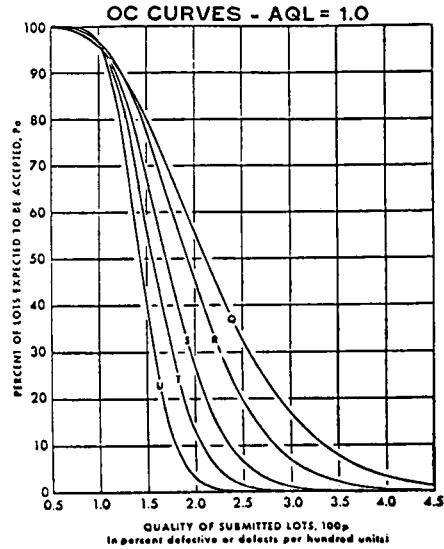
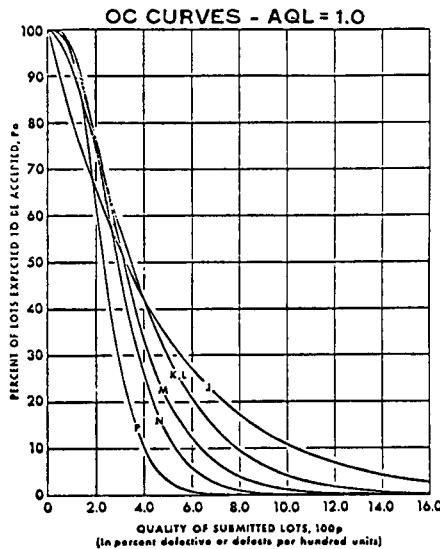
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SAMPLING PLANS AND OPERATING CHARACTERISTIC (OC) CURVES FOR AQL=1.0 PERCENT DEFECTIVE (OR AQL=1.0 DEFECTS PER HUNDRED UNITS)

[Sampling plans—AQL=1.0]

Comparable sampling plans	Identification letter of OC curve														
	J			K, L			M			N			P		
	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re
Single	21	0	1	48	1	2	84	2	3	126	3	4	200	4	5
Double .....	.....	....	....	29	0	2	.....	....	....	.....	....	....	.....	....	....
	Q			R			S			T			U		
	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re
Single	315	6	7	500	9	10	800	13	14	1250	19	20	2000	28	29

n_c =Cumulative sample size. Ac=Acceptance number. Re=Rejection number.



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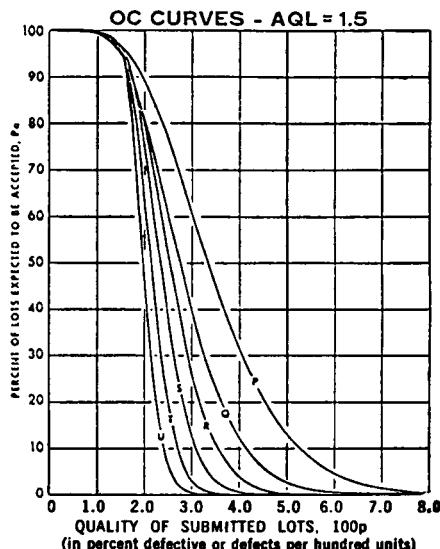
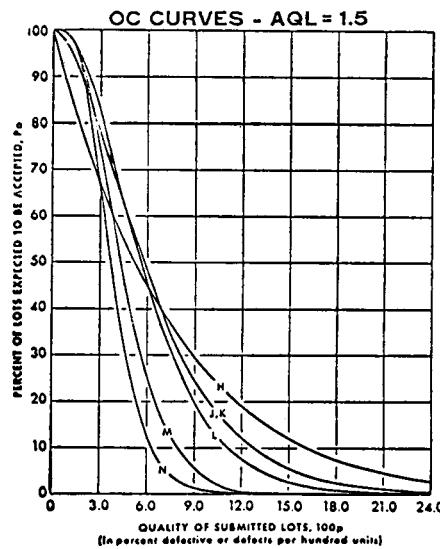
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SAMPLING PLANS AND OPERATING CHARACTERISTIC (OC) CURVES FOR AQL=1.5 PERCENT DEFECTIVE (OR AQL=1.5 DEFECTS PER HUNDRED UNITS)

[Sampling plans—AQL=1.5]

Comparable sampling plans	Identification letter of OC curve																	
	H			J, K			L			M			N			P		
	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re
Single	13	0	1	29	1	2	48	2	3	84	3	4	126	4	5	200	6	7
Double .....	....	....	....	21	0	2	....	....	....	....	....	....	....	....	....	....	....	....
	Q			R			S			T			U					
	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re
Single	315	8	9	500	12	13	800	18	19	1,250	26	27	2,000	39	40			

n_c =Cumulative sample size. Ac=Acceptance number. Re=Rejection number.



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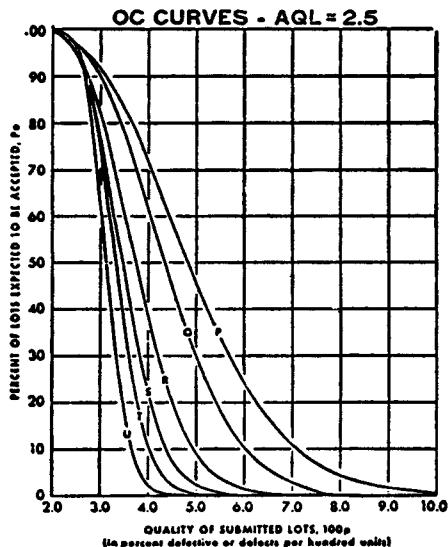
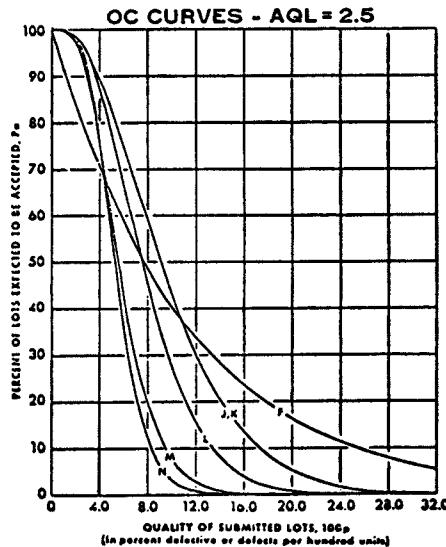
SAMPLING PLANS AND OPERATING CHARACTERISTIC (OC) CURVES FOR AQL=2.5 PERCENT DEFECTIVE (OR AQL=2.5 DEFECTS PER HUNDRED UNITS)

[Sampling plans—AQL=2.5]

Comparable sampling plans	Identification letter of OC curve																	
	F			J, K			L			M			N			P		
	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re
Single	9	0	1	29	2	3	48	3	4	84	4	5	126	6	7	200	9	10
Double .....	.....	....	....	21	0	2	.....	....	....	.....	....	....	.....	....	....	.....	....	....
				31	2	3	.....	....	....	.....	....	....	.....	....	....	.....	....	....

	Q			R			S			T			U		
	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re
	Single	315	13	14	500	18	19	800	27	28	1,250	41	42	2,000	62

n_c =Cumulative sample size. Ac=Acceptance number. Re=Rejection number.



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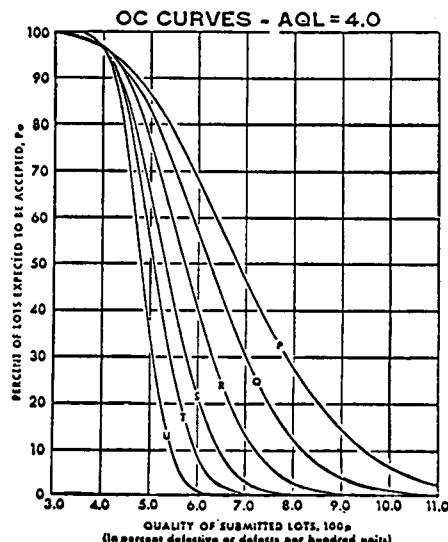
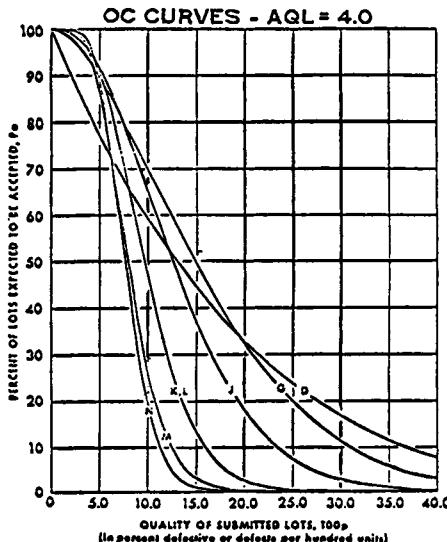
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SAMPLING PLANS AND OPERATING CHARACTERISTIC (OC) CURVES FOR AQL=4.0 PERCENT DEFECTIVE (OR AQL=4.0 DEFECTS PER HUNDRED UNITS)

[Sampling plans—AQL=4.0]

Comparable sampling plans	Identification letter of OC curve																	
	D			G			J			K L			M			N		
	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re
Single	5	0	1	11	1	2	21	2	3	48	4	5	84	6	7	126	9	10
Double .....	....	....	....	....	....	....	....	....	....	29	1	4	....	....	....	....	....	....
	....	....	....	....	....	....	....	....	....	65	6	7	....	....	....	....	....	....
	P			Q			R			S			T			U		
	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re
Single	200	13	14	315	19	20	500	28	29	800	42	43	1250	63	64	2000	96	

n_c =Cumulative sample size. Ac=Acceptance number. Re=Rejection number.



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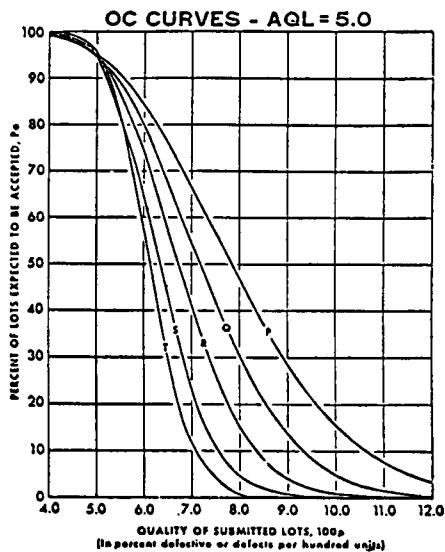
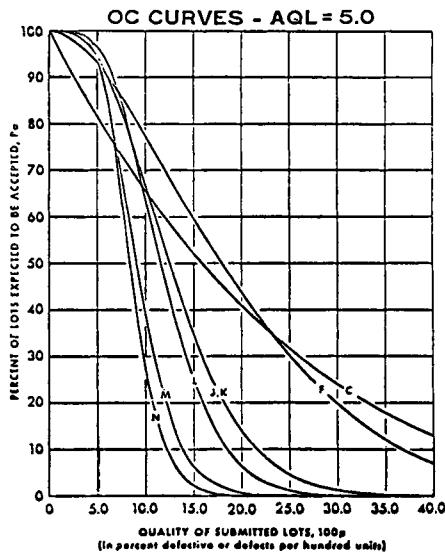
SAMPLING PLANS AND OPERATING CHARACTERISTIC (OC) CURVES FOR AQL=5.0 PERCENT DEFECTIVE (OR AQL=5.0 DEFECTS PER HUNDRED UNITS)

[Sampling plans—AQL=5.0]

Comparable sampling plans	Identification letter of OC curve																	
	C			F			J, K			L			M			N		
	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re
Single	4	0	1	1	1	2	29	3	4	48	5	6	84	7	8	126	10	11
Double .....	....	....	....	....	....	....	21	1	4	....	....	....	....	....	....	....	....	....

	P			Q			R			S			T		
	n_c	Ac	Re												
Single	200	15	16	315	22	23	500	33	34	800	50	51	1250	76	77

n_c =Cumulative sample size. Ac=Acceptance number. Re=Rejection number.



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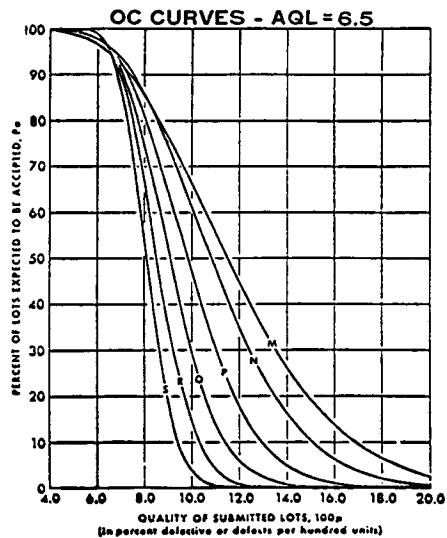
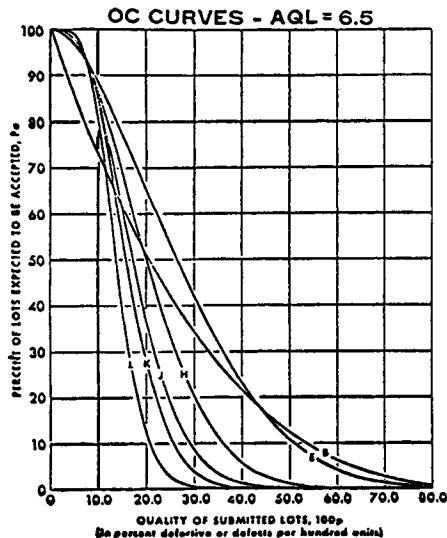
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SAMPLING PLANS AND OPERATING CHARACTERISTIC (OC) CURVES FOR AQL=6.5 PERCENT DEFECTIVE (OR AQL=6.5 DEFECTS PER HUNDRED UNITS)

[Sampling plans—AQL=6.5]

Comparable sampling plans	Identification letter of OC curve																	
	B			E			H			J			K			L		
	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re
Single	3	0	1	6	1	2	13	2	3	21	3	4	29	4	5	48	6	7
M			N			P			Q			R			S			
n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	
Single	84	9	10	126	13	14	200	19	20	315	28	29	500	42	43	800	64	65

n_c =Cumulative sample size. Ac=Acceptance number. Re=Rejection number.



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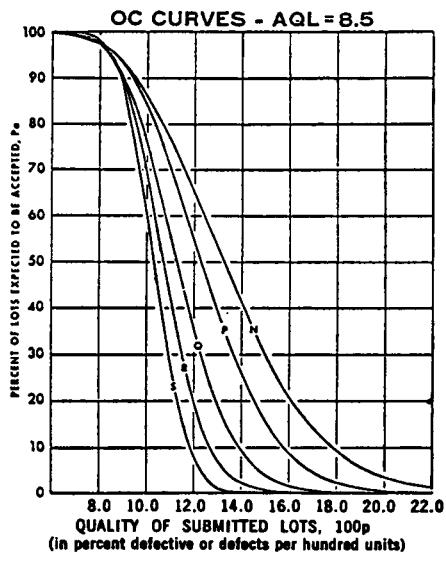
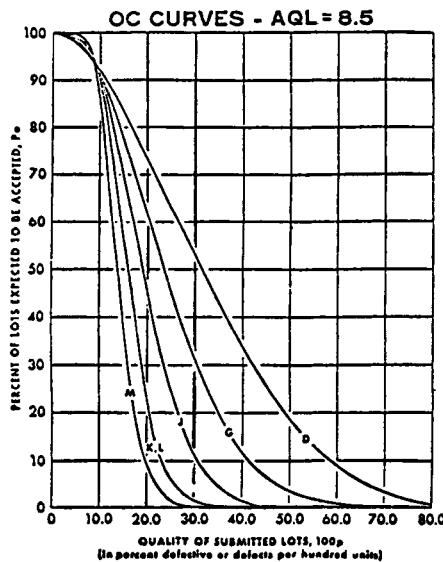
7 CFR Ch. I (1-1-08 Edition)

SAMPLING PLANS AND OPERATING CHARACTERISTIC (OC) CURVES FOR AQL=8.5 PERCENT DEFECTIVE (OR AQL=8.5 DEFECTS PER HUNDRED UNITS)

[Sampling plans—AQL=8.5]

Comparable sampling plans	Identification letter of OC curve														
	D			G			J			K, L			M		
	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re
Single	5	1	2	11	2	3	24	4	5	48	7	8	84	11	1
Double .....	.....	....	....	.....	....	....	21	3	5	29	3	7	65	9	10
							31	5	6						
	N			P			Q			R			S		
	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re
Single	126	16	17	200	24	25	315	35	36	500	53	54	800	82	83

n_c =Cumulative sample size. Ac=Acceptance number. Re=Rejection number.



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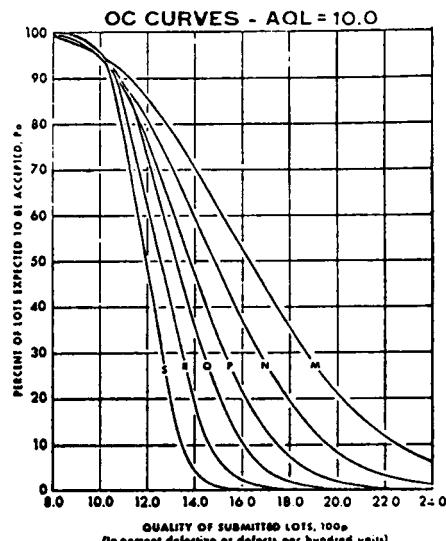
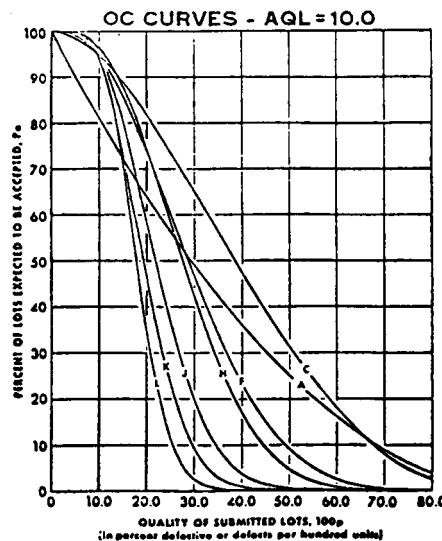
§ 43.106

SAMPLING PLANS AND OPERATING CHARACTERISTIC (OC) CURVES FOR AQL=10.0 PERCENT DEFECTIVE (OR AQL=10.0 DEFECTS PER HUNDRED UNITS)

[Sampling plans—AQL=10.0]

Comparable sam- pling plans	Identification letter of OC curve														L						
	A			C			F			H			J			K			L		
	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re
Single	2	0	1	4	1	2	9	2	3	13	3	4	21	4	5	29	5	6	48	8	9
				M			N			P			Q			R			S		
				n_c	Ac	Re	$n_c$	Ac	Re	$n_c$	Ac	Re	$n_c$	Ac	Re	$n_c$	Ac	Re	$n_c$	Ac	Re
Single	84	13	14	126	18	19	200	27	28	315	41	42	500	62	63	800	95	96			

n_c =Cumulative sample size. Ac=Acceptance number. Re=Rejection number.



§43.106

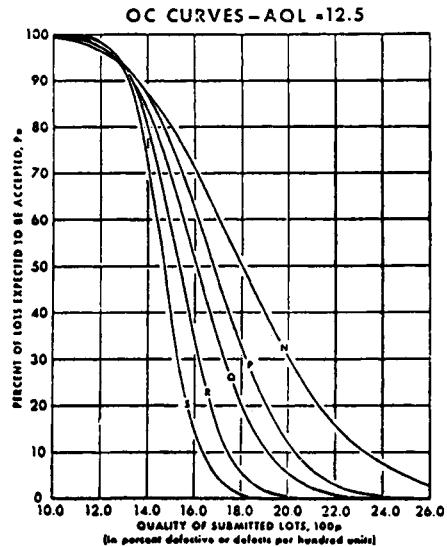
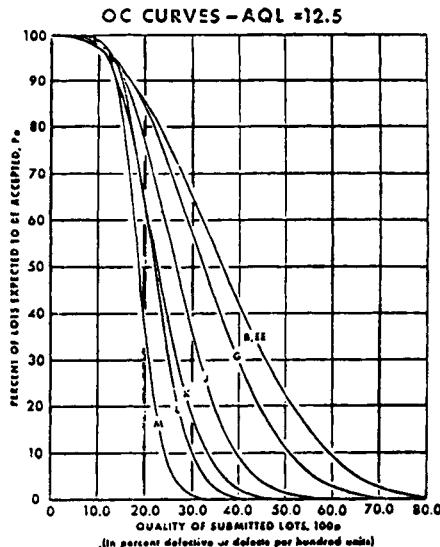
7 CFR Ch. I (1-1-08 Edition)

SAMPLING PLANS AND OPERATING CHARACTERISTICS (OC) CURVES FOR AQL=12.5 PERCENT DEFECTIVE (OR AQL=12.5 DEFECTS PER HUNDRED UNITS)

[Sampling plans—AQL=12.5]

Identification letter of OC curve	Comparable sampling plans																	
	B, EE			G			J			K			L			M		
	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re
Single	7	2	3	11	3	4	21	5	6	29	6	7	48	10	11	84	15	16
Double	3 8	0 2	3 3	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
	N			P			Q			R			S					
	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re			
Single	126	22	23	200	33	34	315	50	51	500	76	77	800	117	118			

n_c =Cumulative sample size. Ac=Acceptance number. Re=Rejection number.



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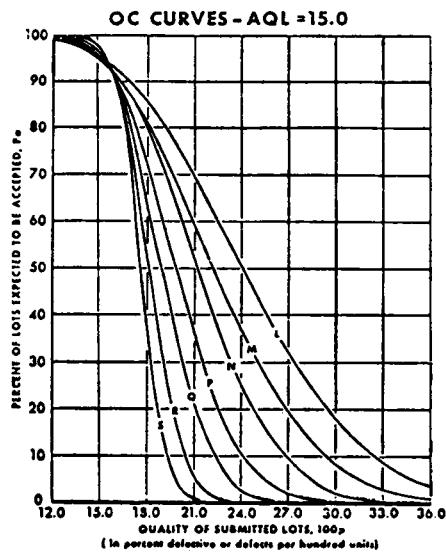
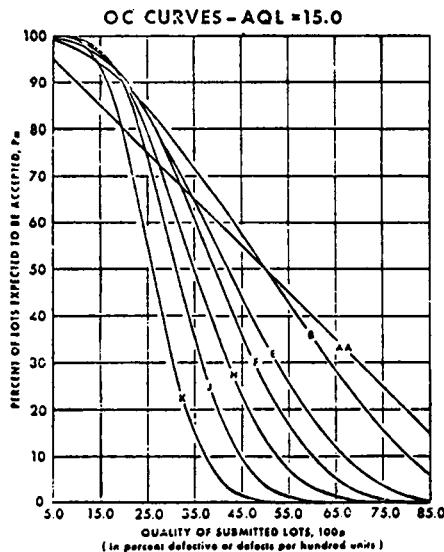
§ 43.106

SAMPLING PLANS AND OPERATING CHARACTERISTIC (OC) CURVES FOR AQL=15.0 PERCENT DEFECTIVE (OR AQL=15.0 DEFECTS PER HUNDRED UNITS)

[Sampling plans—AQL=15.0]

Comparable sampling plans	Identification letter of OC curve																				
	AA			B			E			F			H			J			K		
	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re
Single	1	0	1	3	1	2	6	2	3	9	3	4	13	4	5	21	6	7	29	7	8
	L			M			N			P			Q			R			S		
	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re	n_c	Ac	Re
Single	48	11	12	84	18	19	126	26	27	200	39	40	315	59	60	500	90	91	800	140	141

n_c =Cumulative sample size. Ac=Acceptance number. Re=Rejection number.



PARTS 44-45 [RESERVED]